

# Swap Trends

A Presentation to the  
California Debt and Investment Advisory Commission  
Conference on 'Delving Into Derivatives'  
September 22, 2003

***Swap Financial Group***

*Peter Shapiro*

*76 South Orange Avenue, Suite 6  
South Orange, New Jersey 07079  
973-378-5500*

# Swap math is simple

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*To price a 10-year LIBOR swap:*

- Take the 10-year Treasury yield
- Add the 10-year LIBOR spread

*To price a 10-year BMA swap:*

- Take the 10-year LIBOR swap
- Multiply times the 10-year BMA ratio

# Simple swap math

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**10-year Treasury: 4.29%**

**+ 10-year LIBOR spread: 46 bps**

**= 10-year LIBOR swap: 4.75%**

**x 10-year BMA ratio: 79.75%**

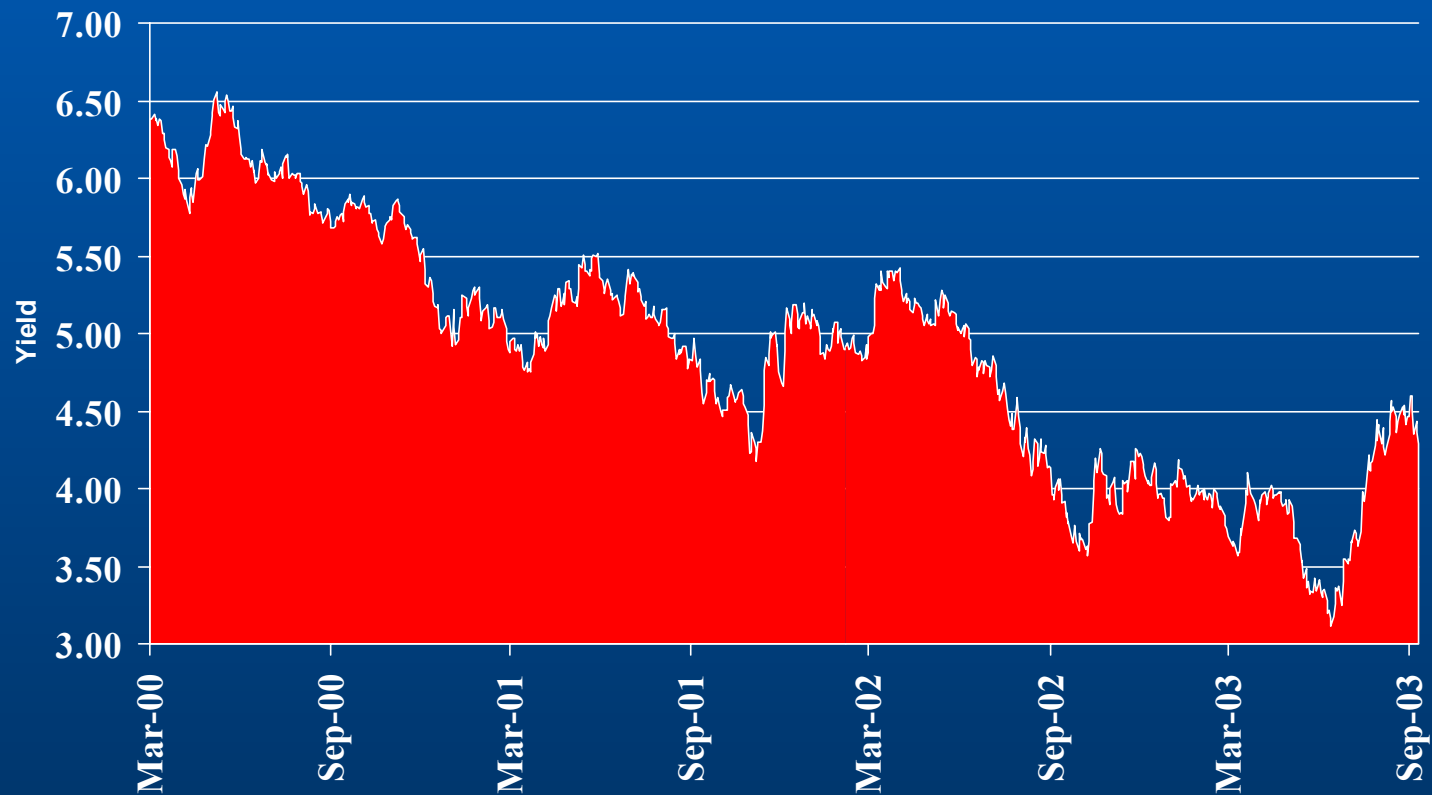
**= 10-year BMA swap: 3.79%**

Rates as of Sept. 10, 2003

# The market gives . . .

2000-03: 10-year Treasury

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# and the market gives more. . .

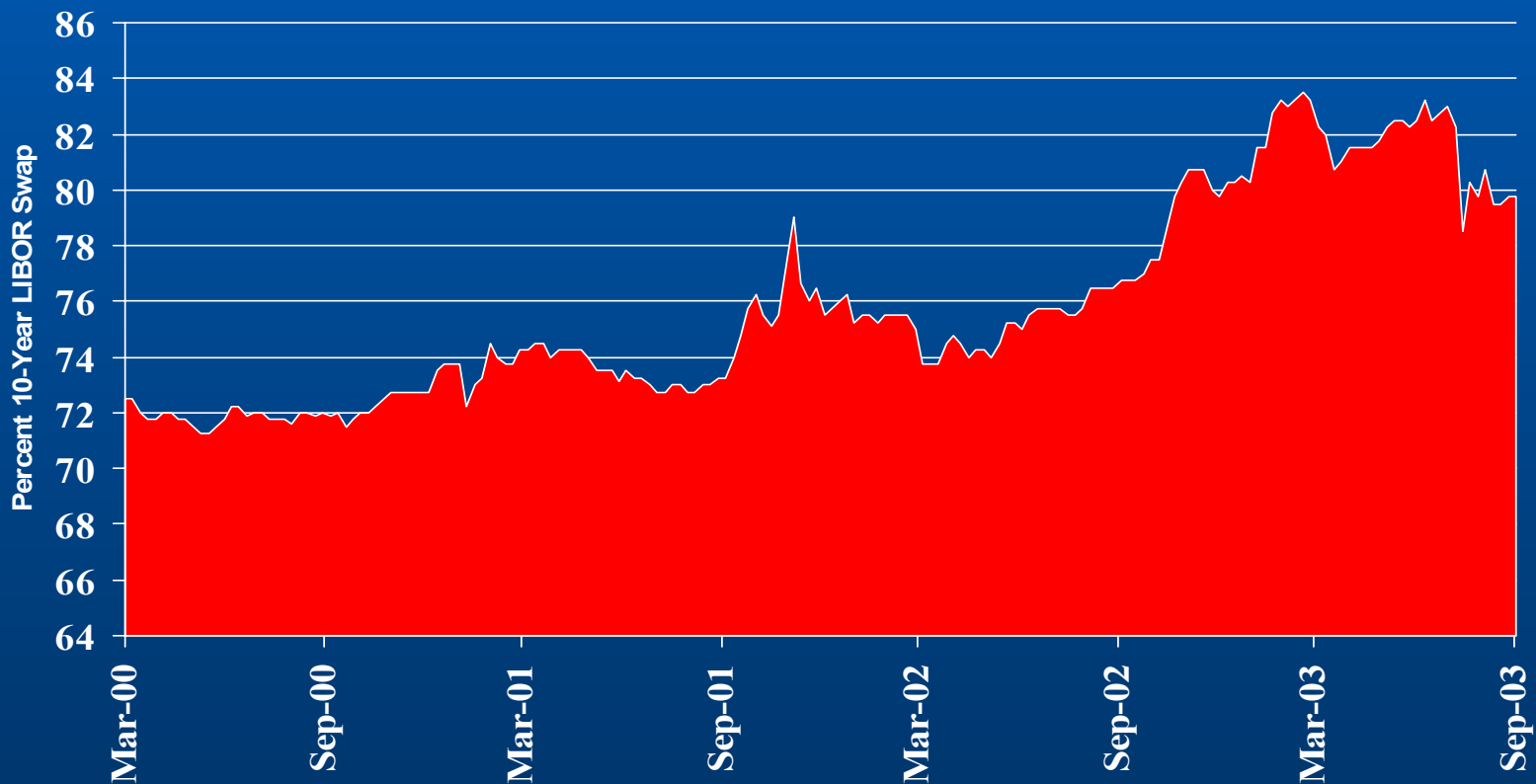
## 2000-03: 10-year swap spread

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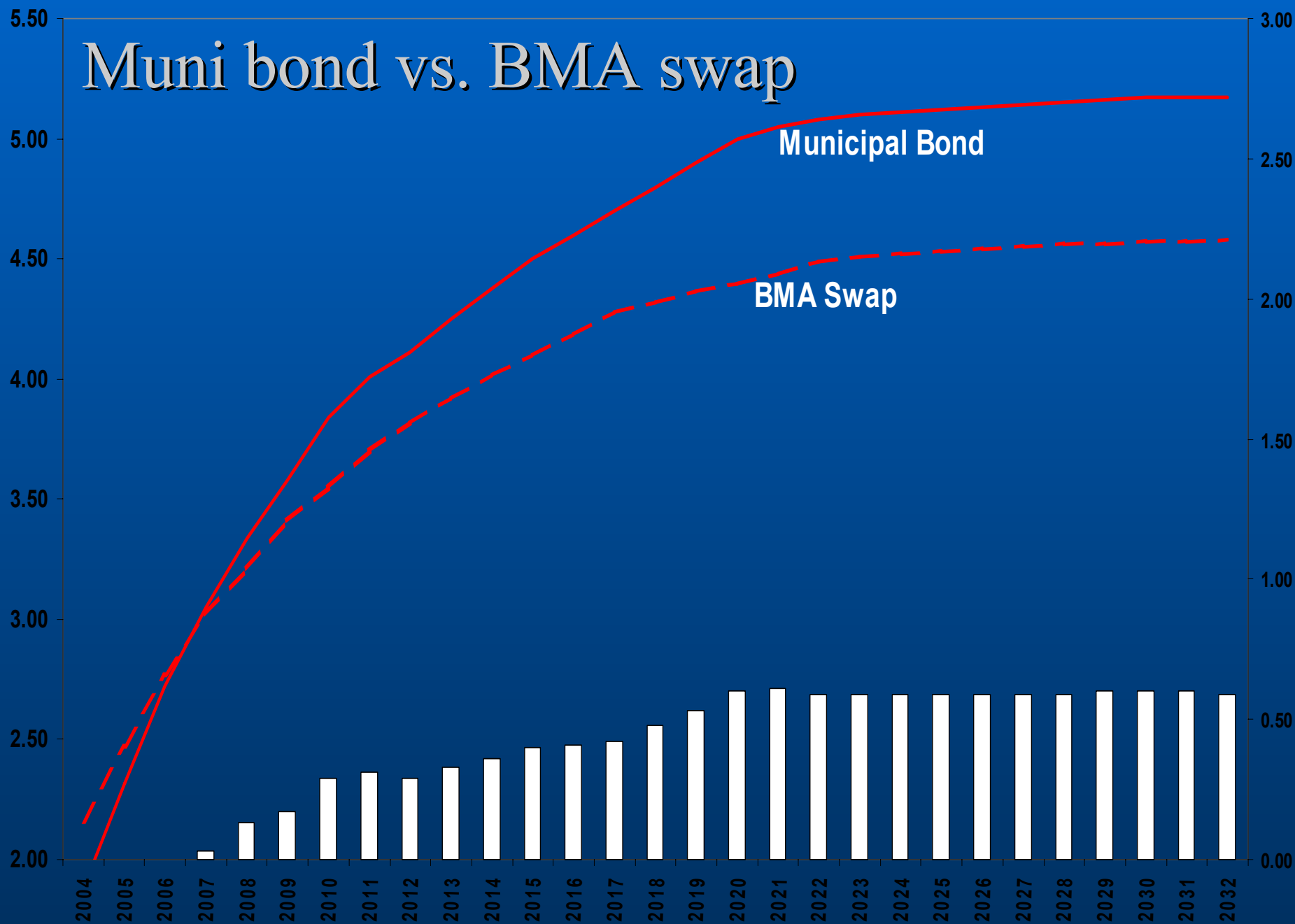


... but the market takes away.

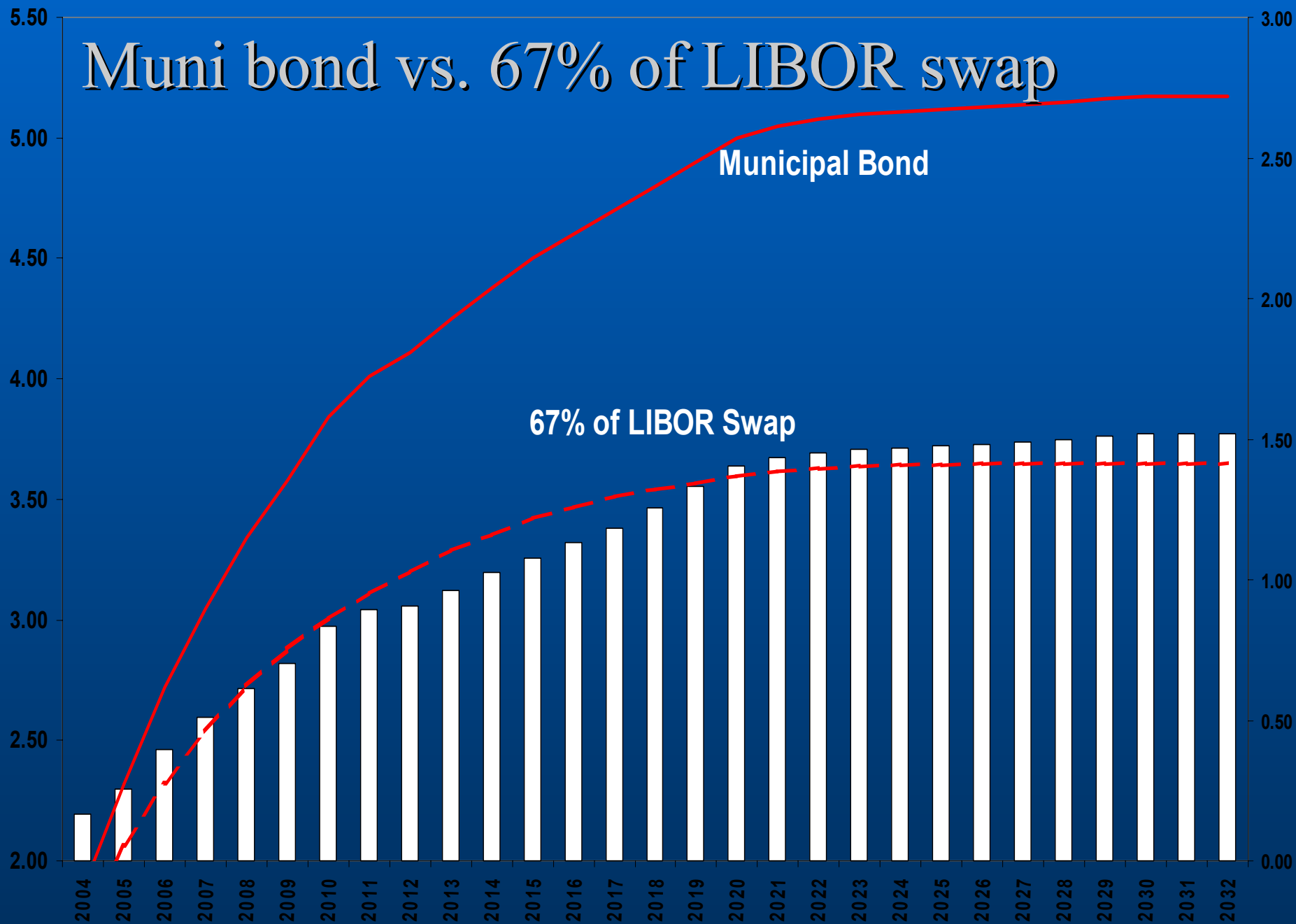
2000-03: BMA swap percents



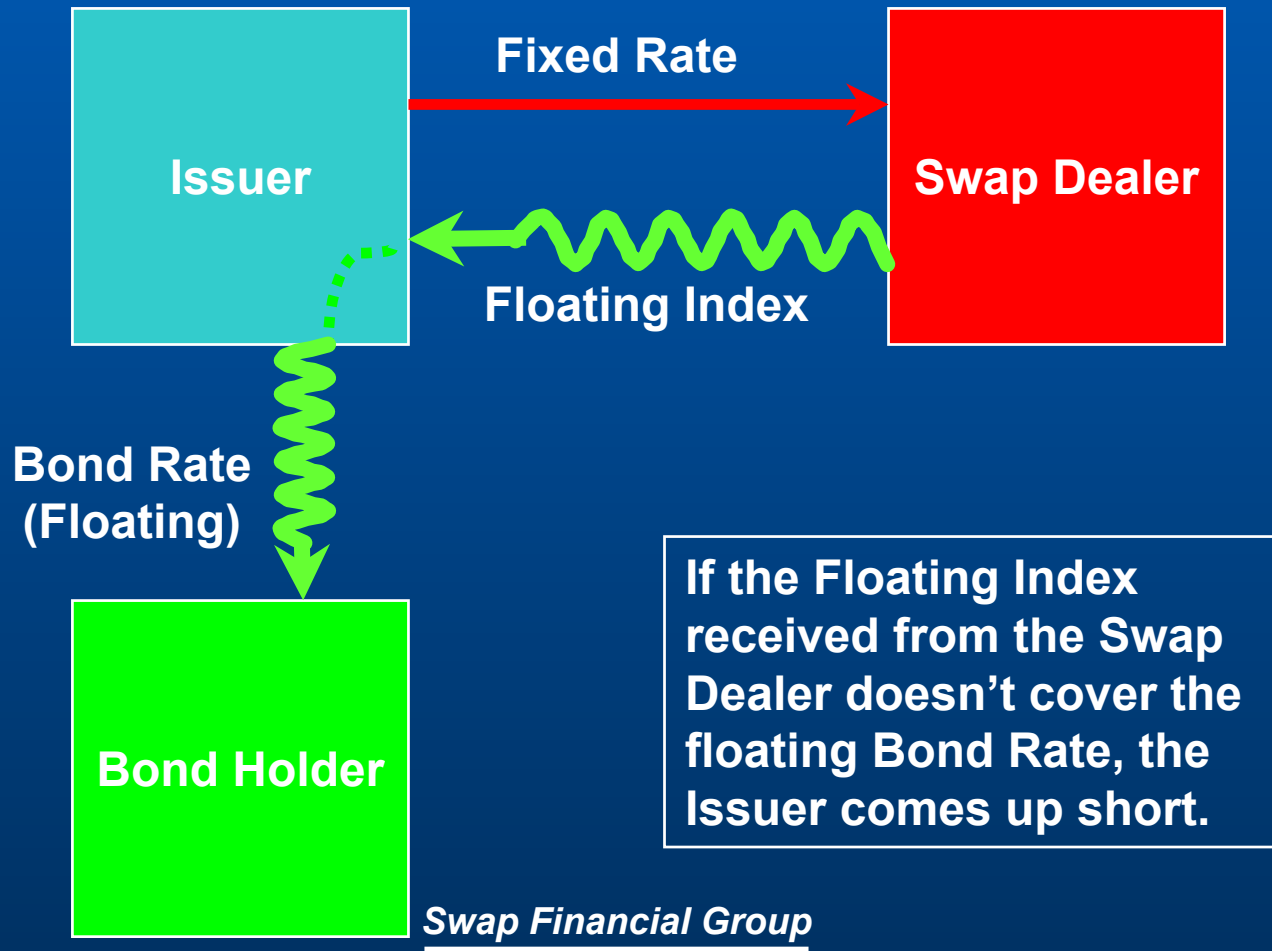
# Muni bond vs. BMA swap



# Muni bond vs. 67% of LIBOR swap



# The floating index matters



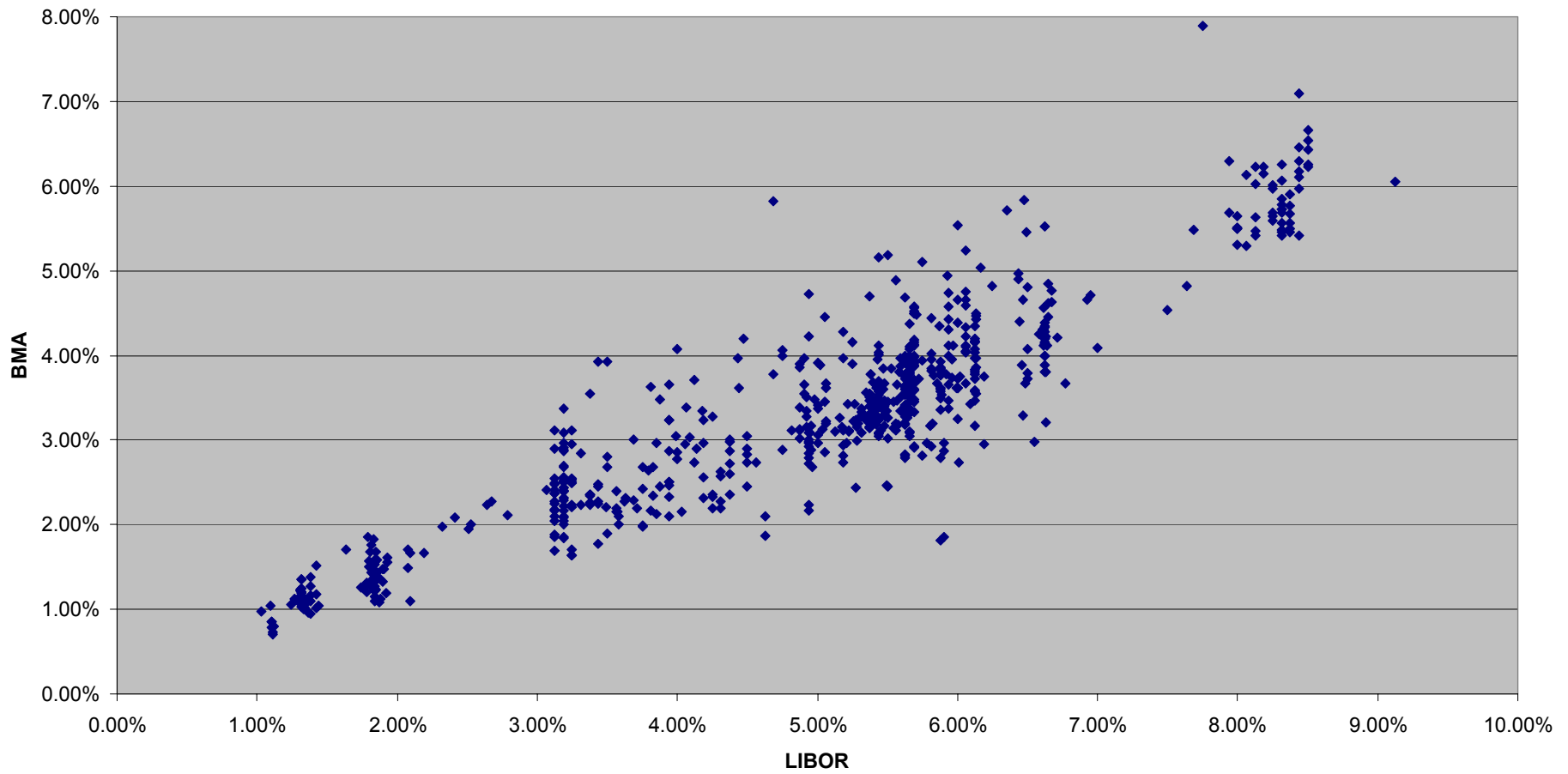
# % of LIBOR coverage issue

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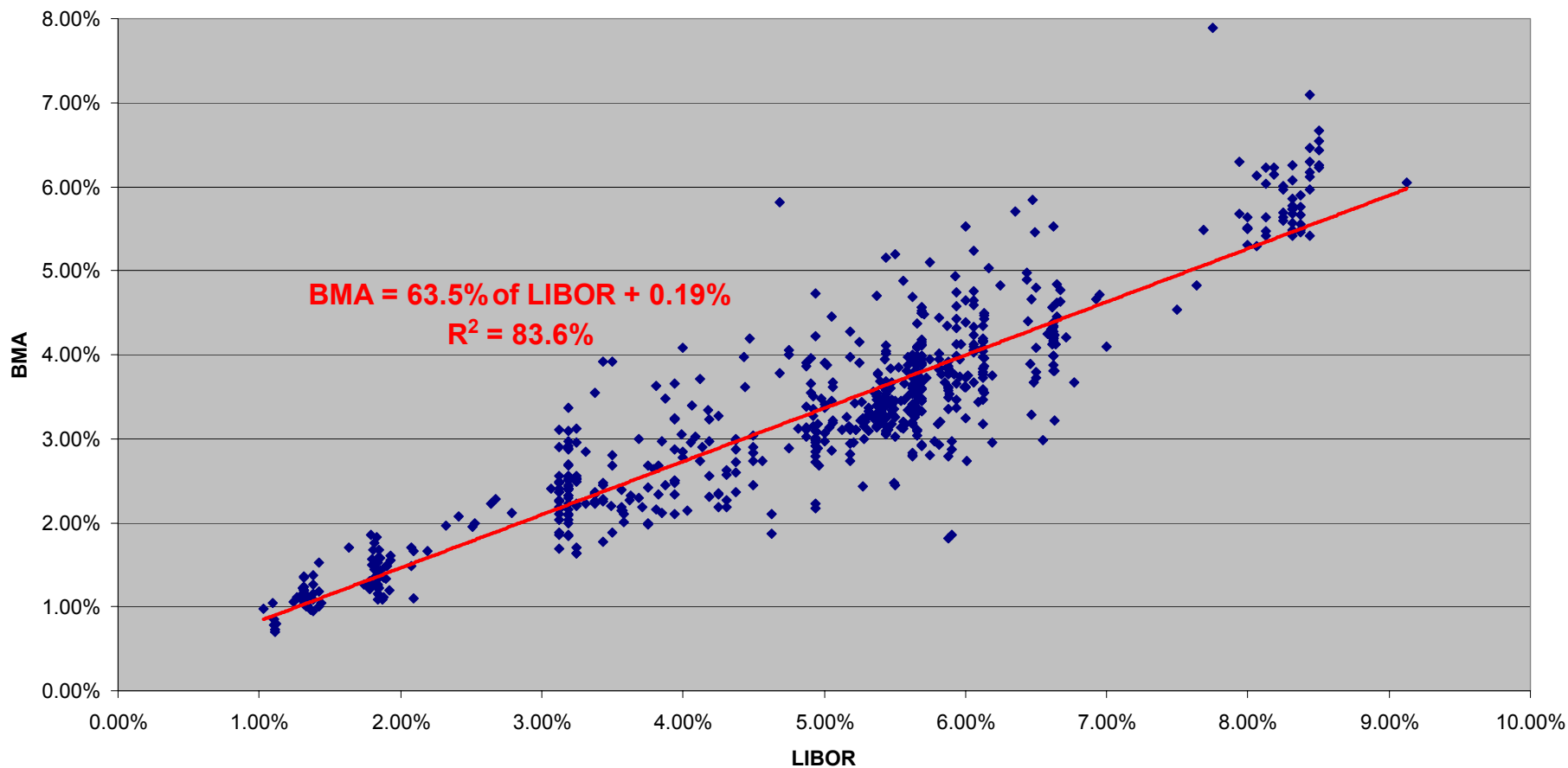
- 67% of LIBOR = Historic BMA average
- With rates so low, 67% of LIBOR fails to cover issuer's BMA liability
- In 2002, BMA = 77.1% of LIBOR
- In 2003 year-to-date, BMA = 81.0% of LIBOR
- What if rates stay ultra low for an extended time?

# BMA and LIBOR Since 1990

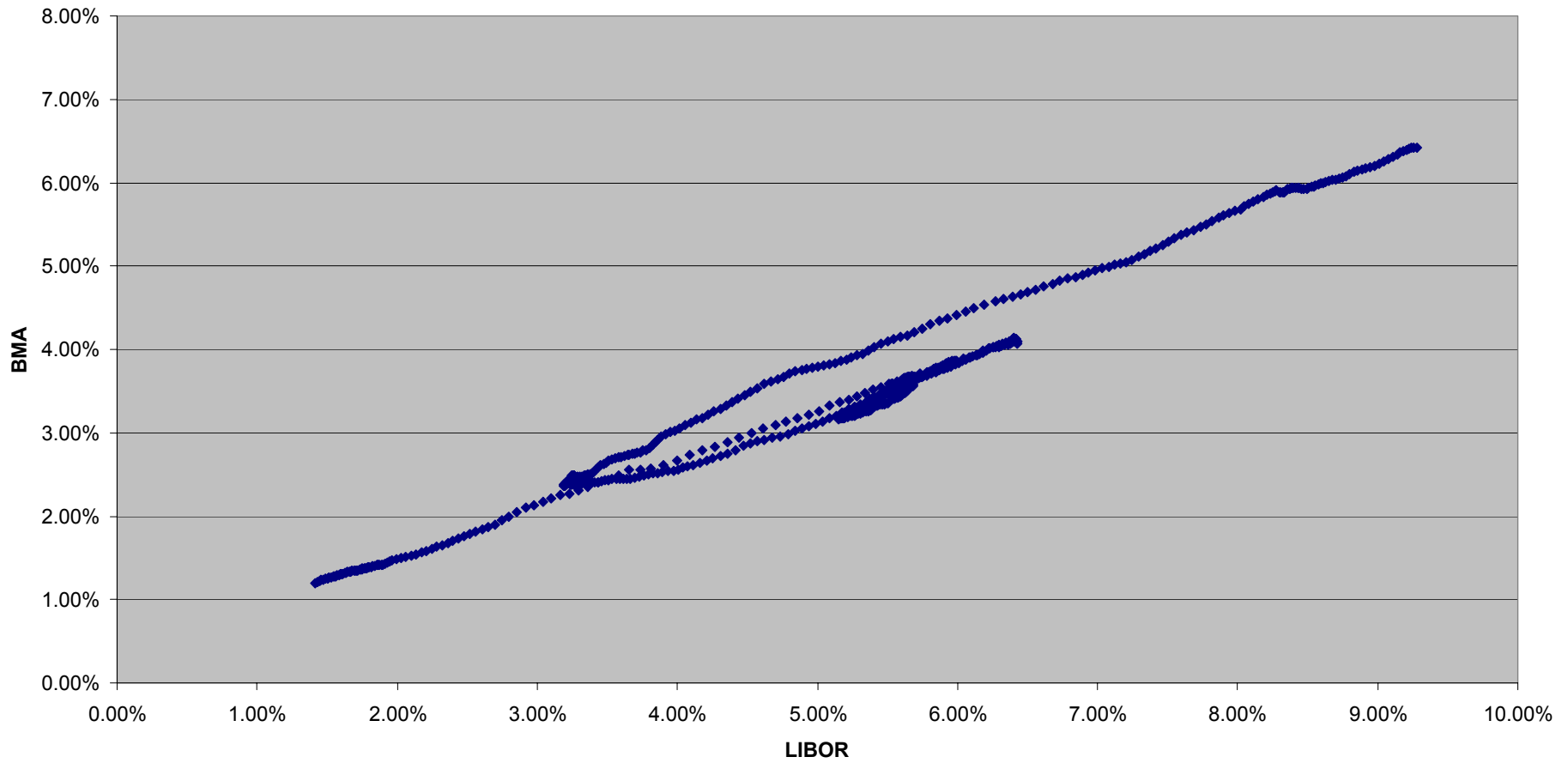
## Weekly Data



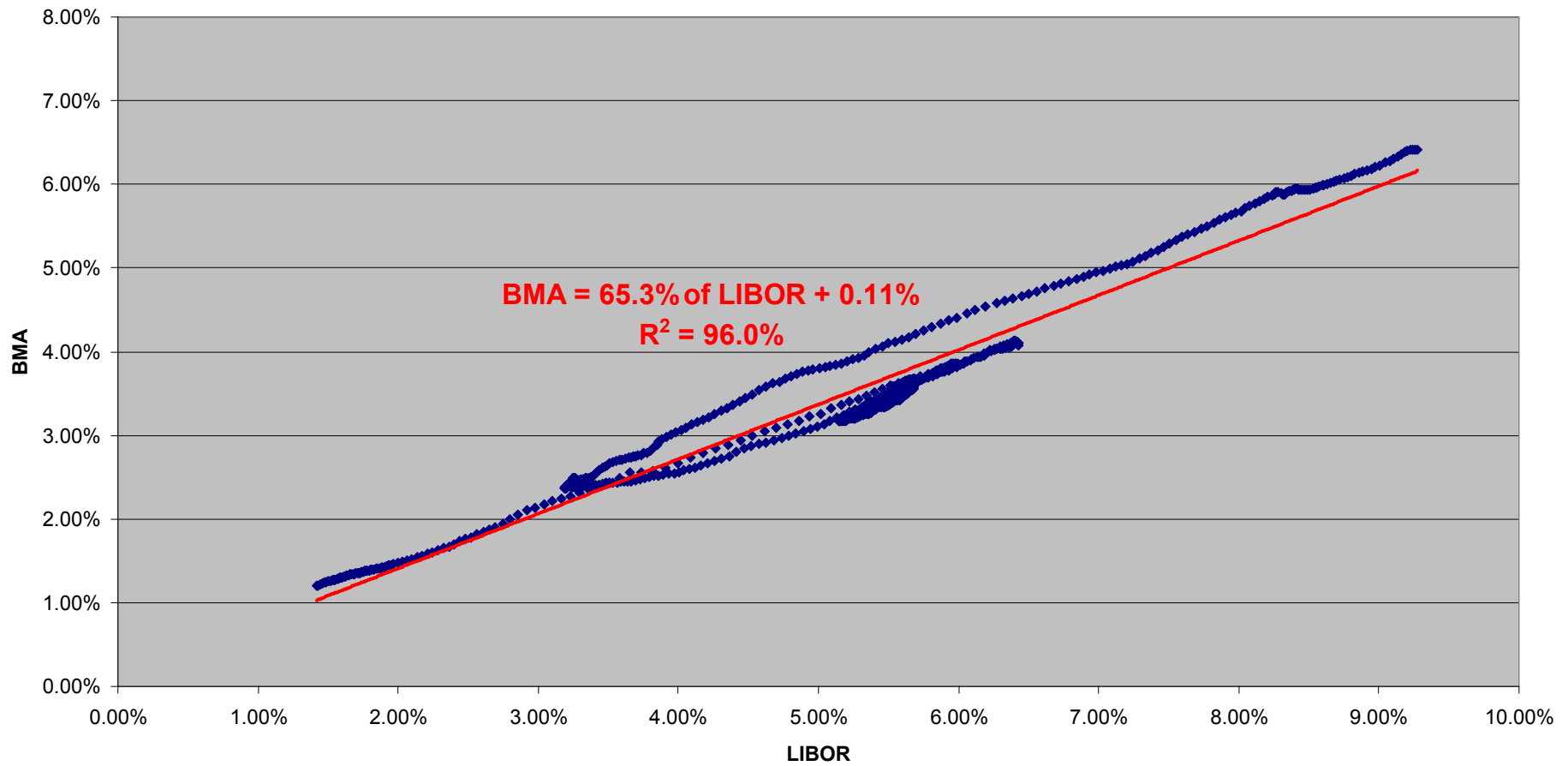
# BMA and LIBOR Since 1990 Weekly Data



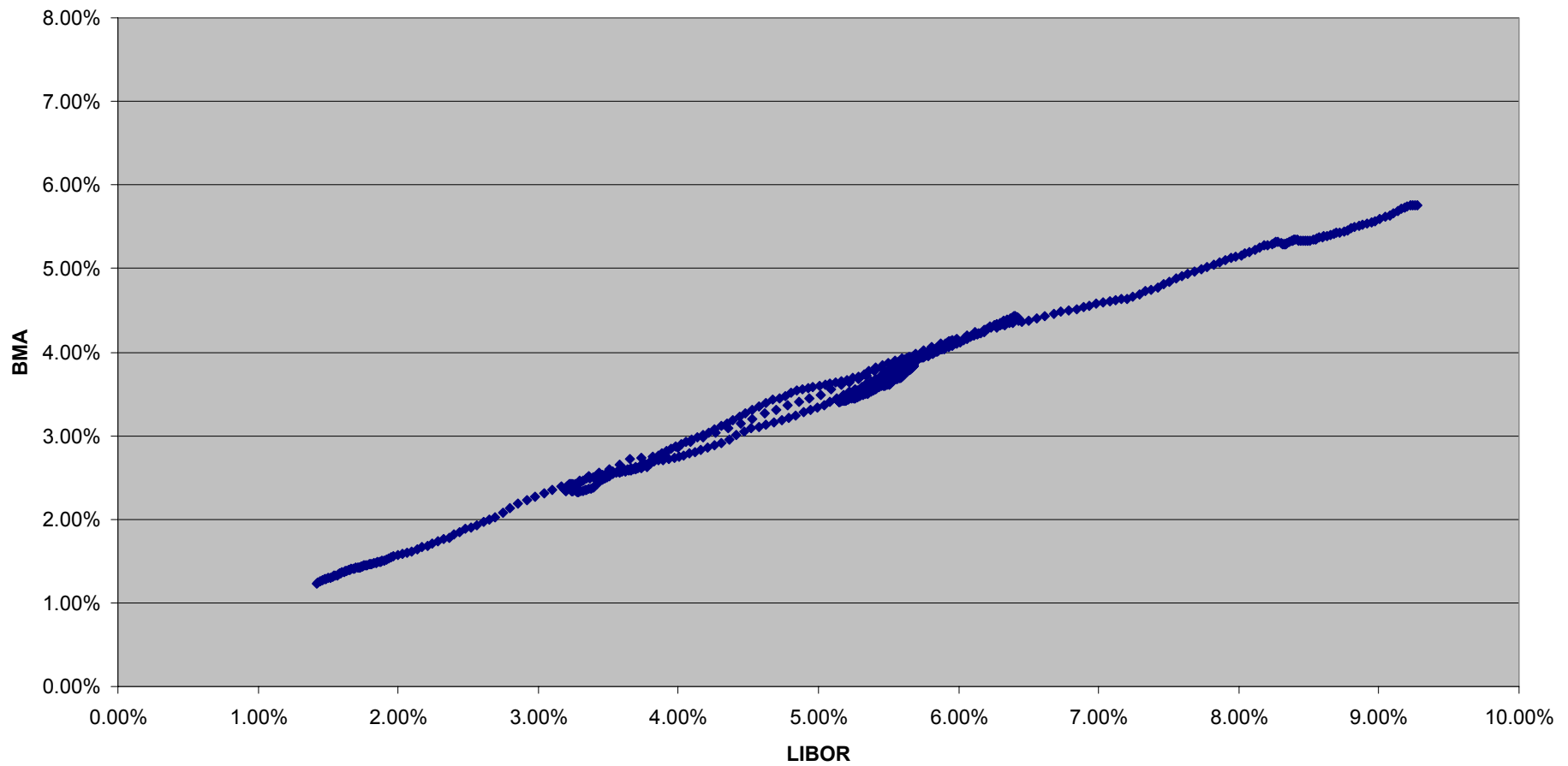
**LIBOR-BMA Since 1990**  
**52 week moving average**



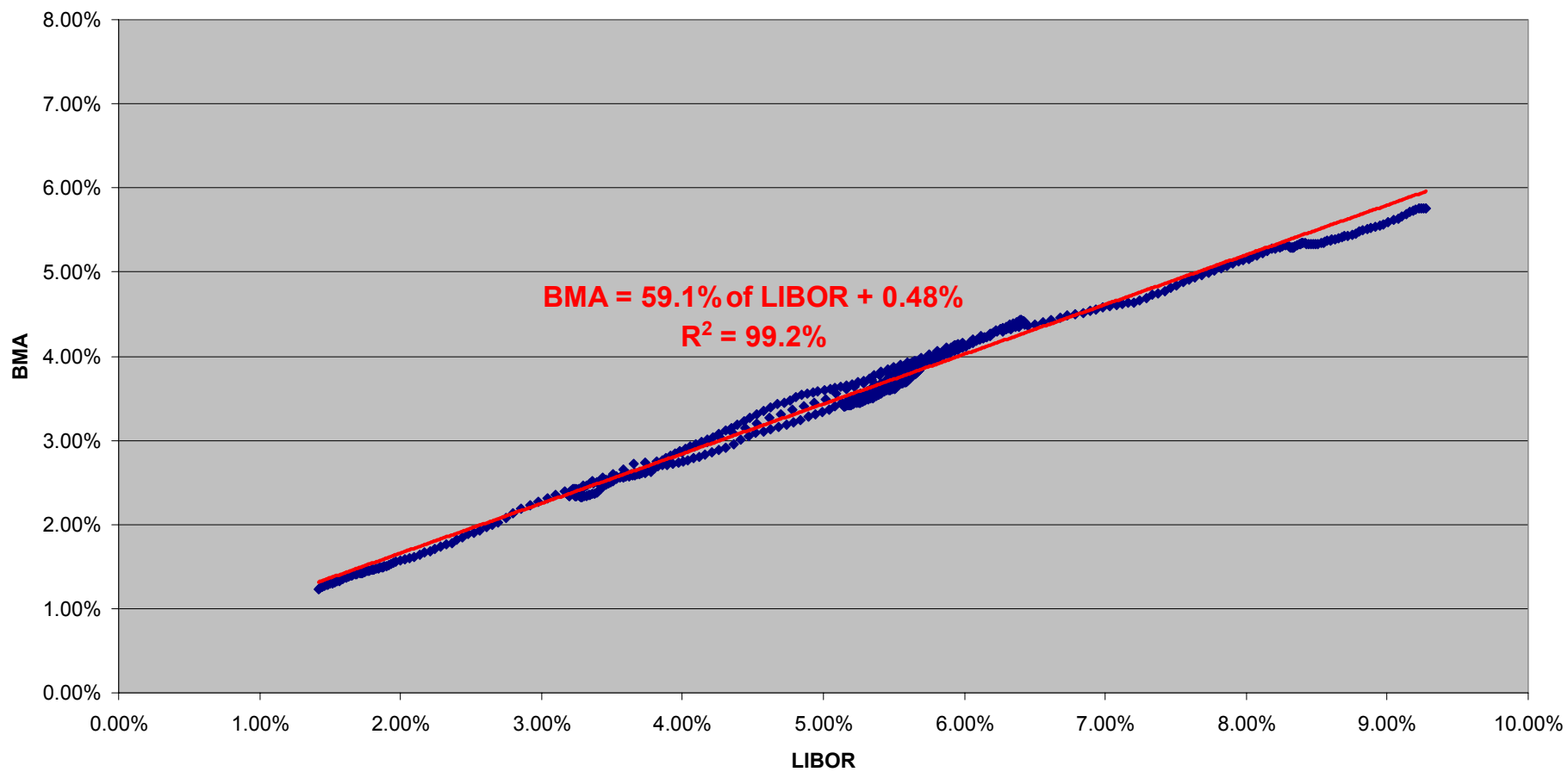
**LIBOR-BMA Since 1990**  
**52 week moving average**



**LIBOR-Adjusted BMA Since 1990**  
**52 week moving average**



**LIBOR-Adjusted BMA Since 1990**  
**52 week moving average**



# Comparative Benefits

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- **67% LIBOR**
  - **Average environment:**  
LIBOR = 5.75%, BMA = 3.75%, formula pays 3.85%
  - **Today's environment:**  
LIBOR = 1.12%, BMA = 0.91%, formula pays 0.75%
  - **High rate environment:**  
LIBOR = 9.00%, BMA = 5.60%, formula pays 6.03%
- **59% LIBOR + 48 bps**
  - **Average environment:**  
LIBOR = 5.75%, BMA = 3.75%, formula pays 3.87%
  - **Today's environment:**  
LIBOR = 1.12%, BMA = 0.91%, formula pays 1.14%
  - **High rate environment:**  
LIBOR = 9.00%, BMA = 5.60%, formula pays 5.79%

# **CalHFA's Use of LIBOR-Based Interest Rate Swaps**

September 22, 2003



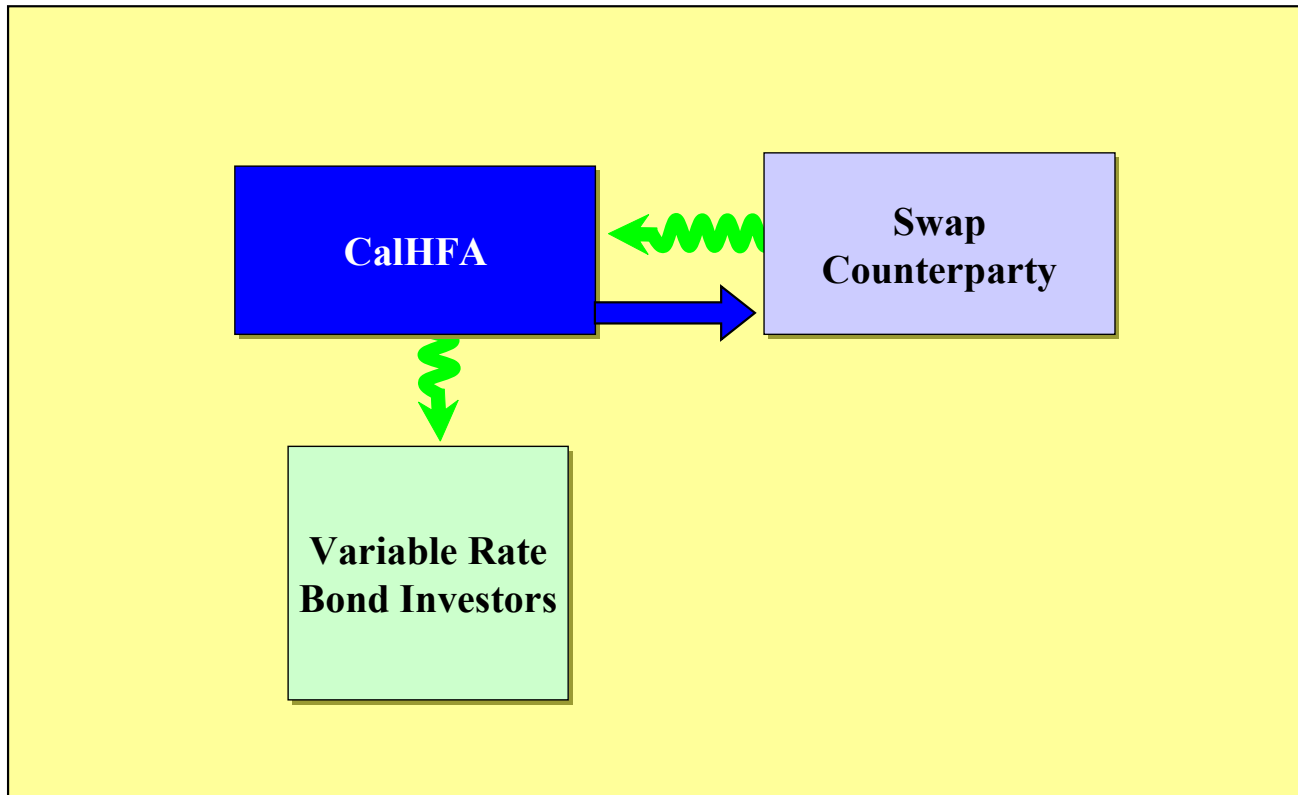
*Affordable Housing is our Business*

# **LIBOR-Based Interest Rate Swaps**

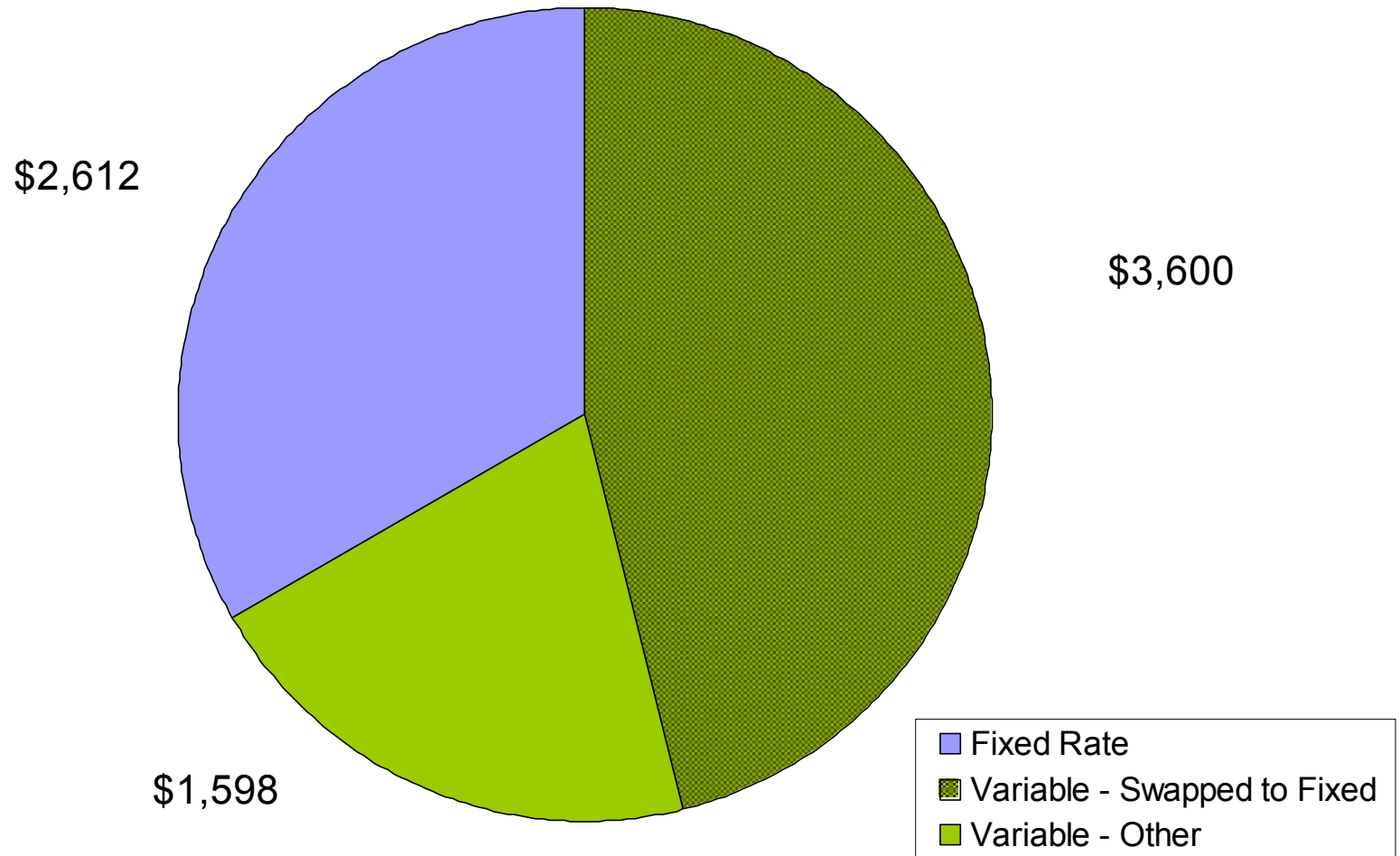
- CalHFA's Variable Rate Bond and Swap Portfolios
- Why CalHFA Uses LIBOR-Based Swaps
- Why and How CalHFA Has Changed the Formula for its LIBOR-Based Swaps

## **CalHFA's Variable Rate Bonds and Interest Rate Swaps**

- CalHFA has \$5.2 billion of variable rate bonds.
- CalHFA has 80 separate interest rate swaps
  - Notional amount is \$3.6 billion
  - All are floating to fixed, establishing synthetic fixed rates

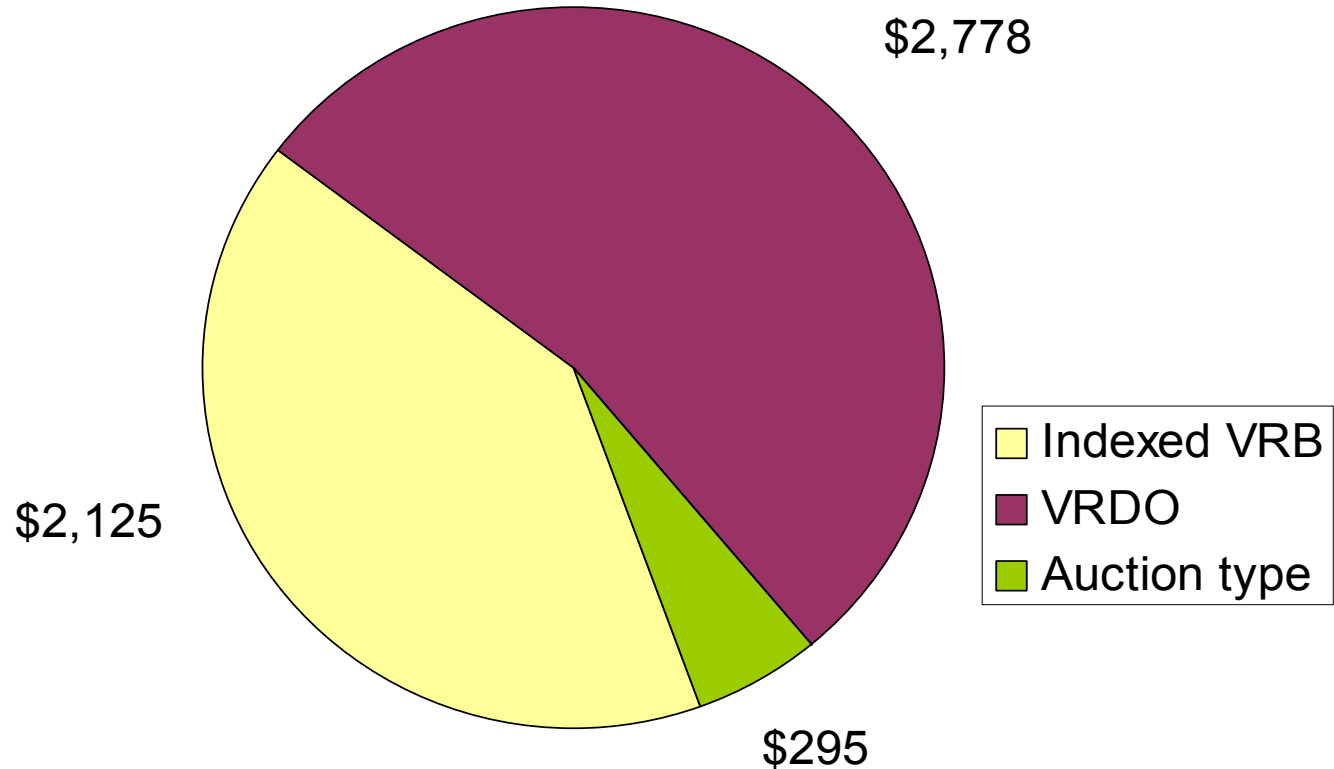


## CalHFA Bonds



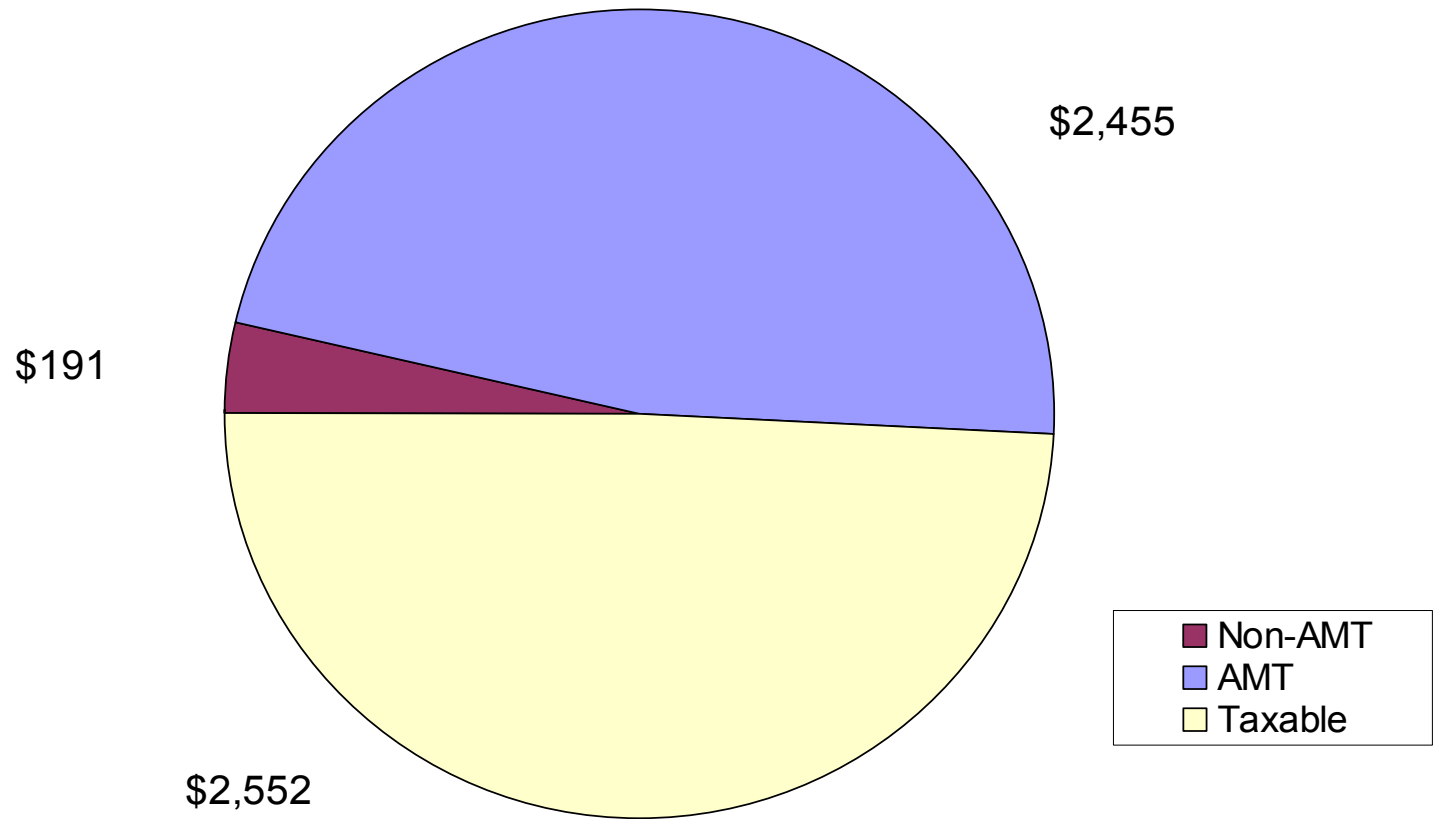
## CalHFA Variable Rate Bonds

(in millions)

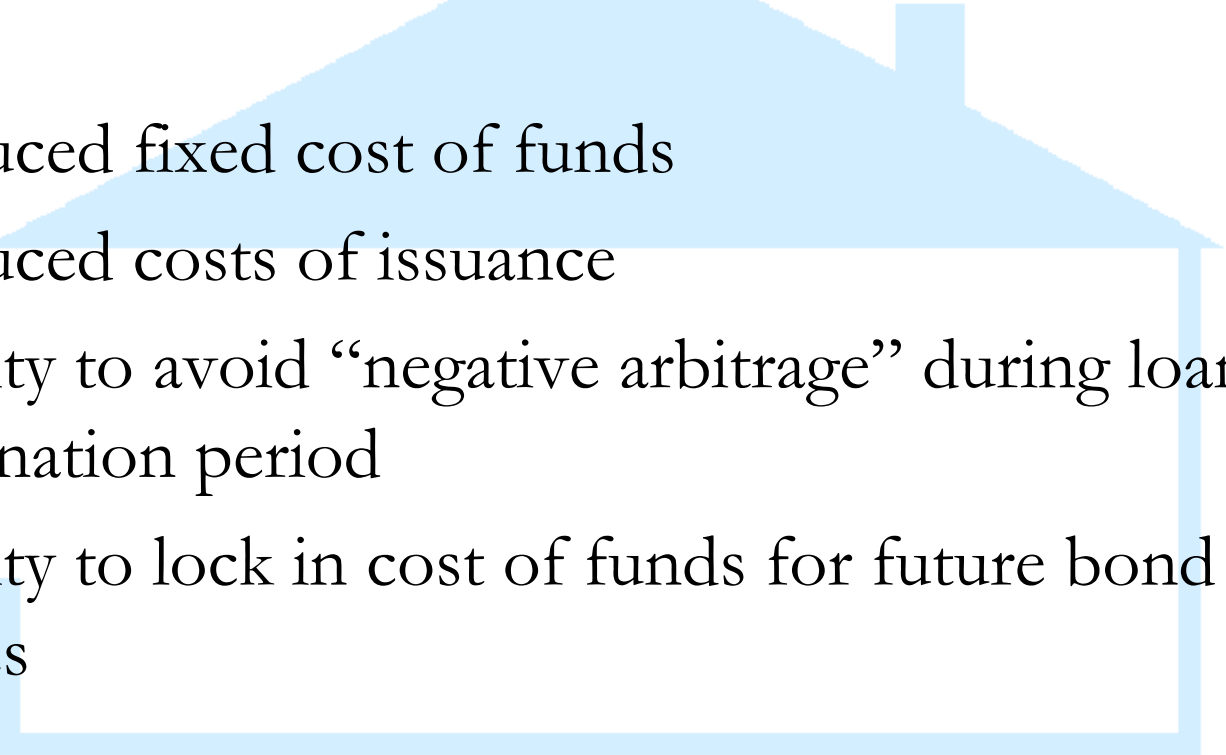


## CalHFA Variable Rate Bonds

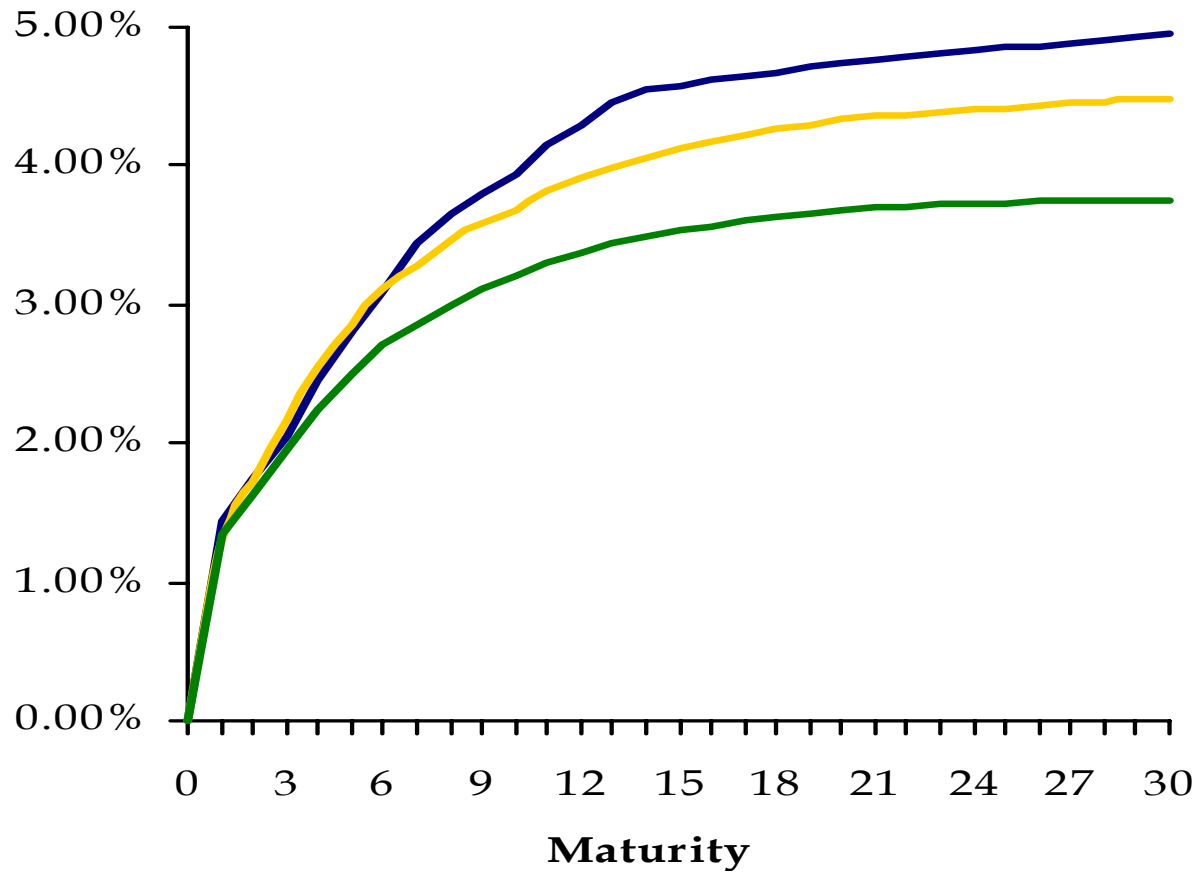
(in millions)



## **Benefits of Swap Strategy**

- 
- Reduced fixed cost of funds
  - Reduced costs of issuance
  - Ability to avoid “negative arbitrage” during loan origination period
  - Ability to lock in cost of funds for future bond issues

## Comparison of Fixed Rate, BMA Swap, and LIBOR Swap Yield Curves



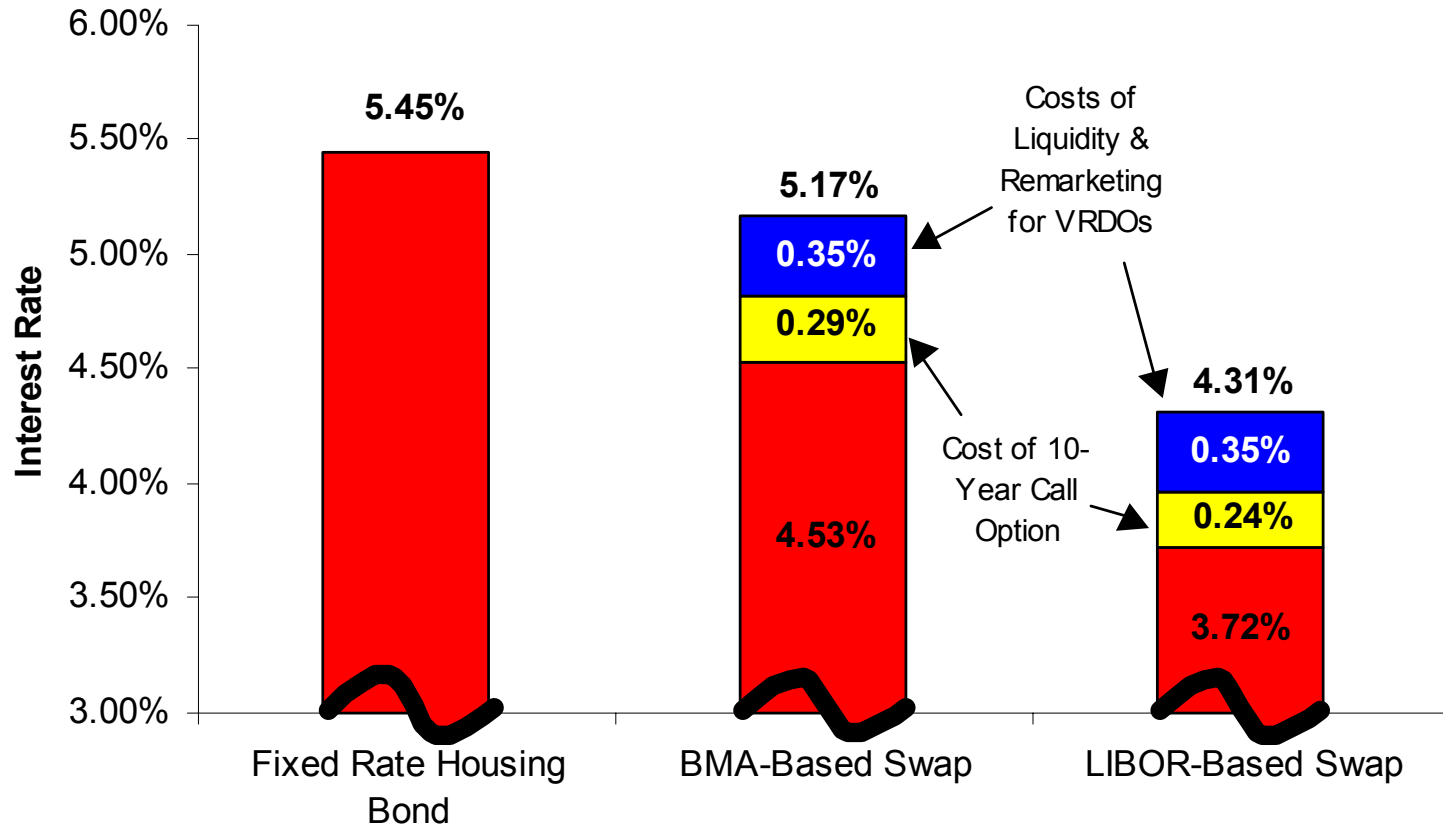
— AMT Fixed Rate

— BMA Swap - 15 bps


— 60% LIBOR Swap + 26 bps

# California Housing Finance Agency

## Comparative Costs of Funds for Fixed-Rate Bonds and Synthetic Fixed-Rate Bonds (Variable Rate Bonds Swapped to Fixed)



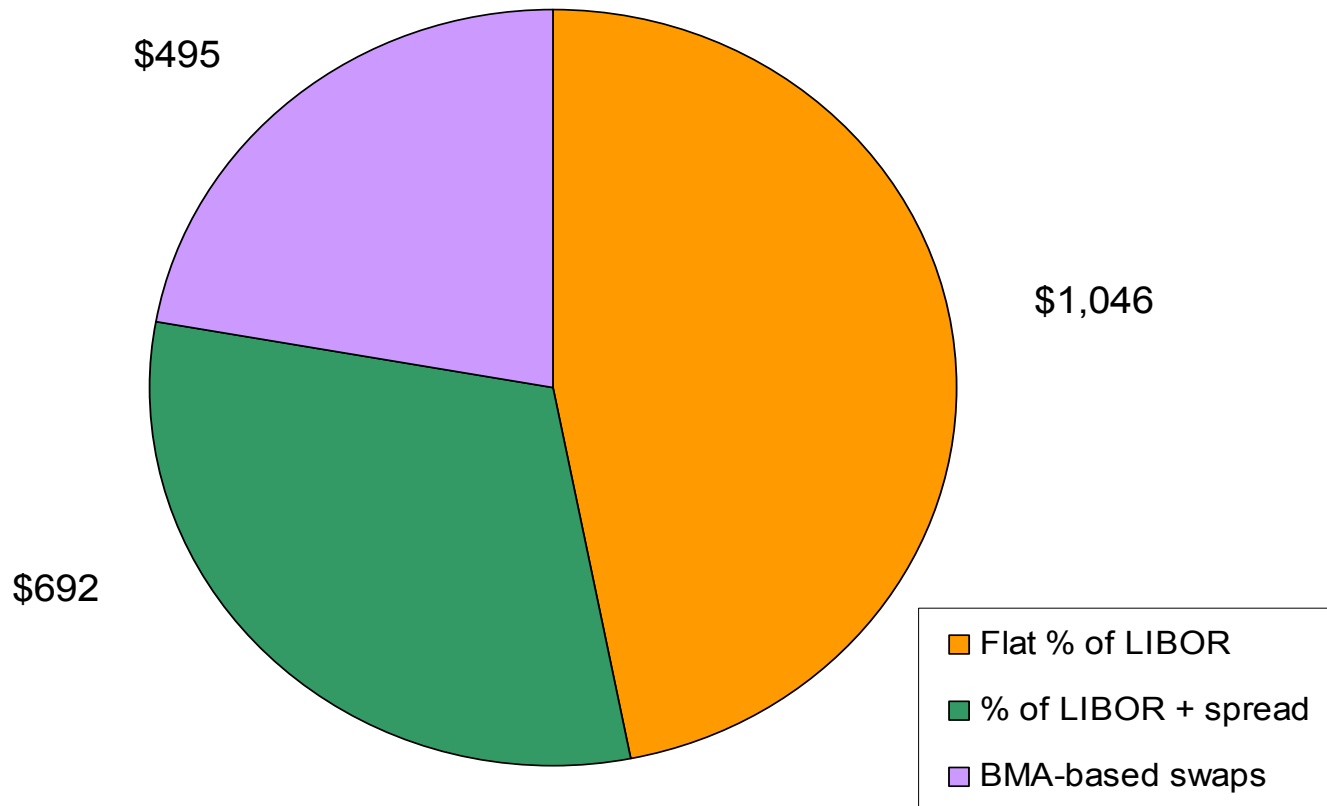
# Risks of Swap Strategy

- 
- Termination Risk
  - Counterparty Risk
  - **Basis Risk**
  - Tax Law Change Risk
  - Amortization Risk
  - Liquidity Risk

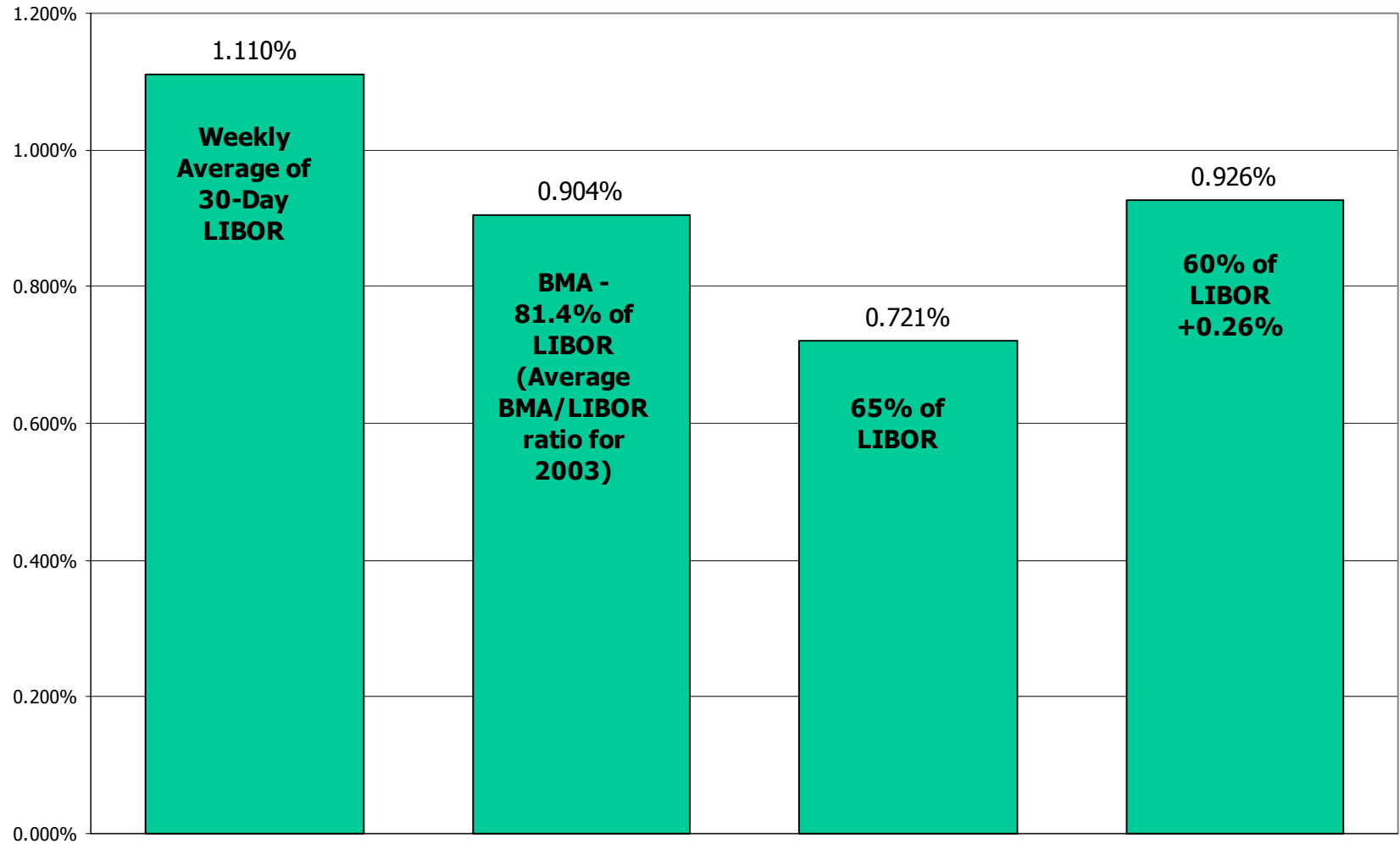
## **Basis Mismatches**

- Caused primarily by yield compression.
- BMA/LIBOR ratio has averaged 81.4% during 2003.
- High BMA/LIBOR ratios result in bond payments exceeding swap receipts.
- Low short-term rates limit the cost of basis mismatches.
- Cal HFA's new formula for LIBOR-based swaps is 60% of LIBOR + 0.26%.

**CalHFA tax-exempt bonds  
swapped to a fixed rate**  
(in millions)

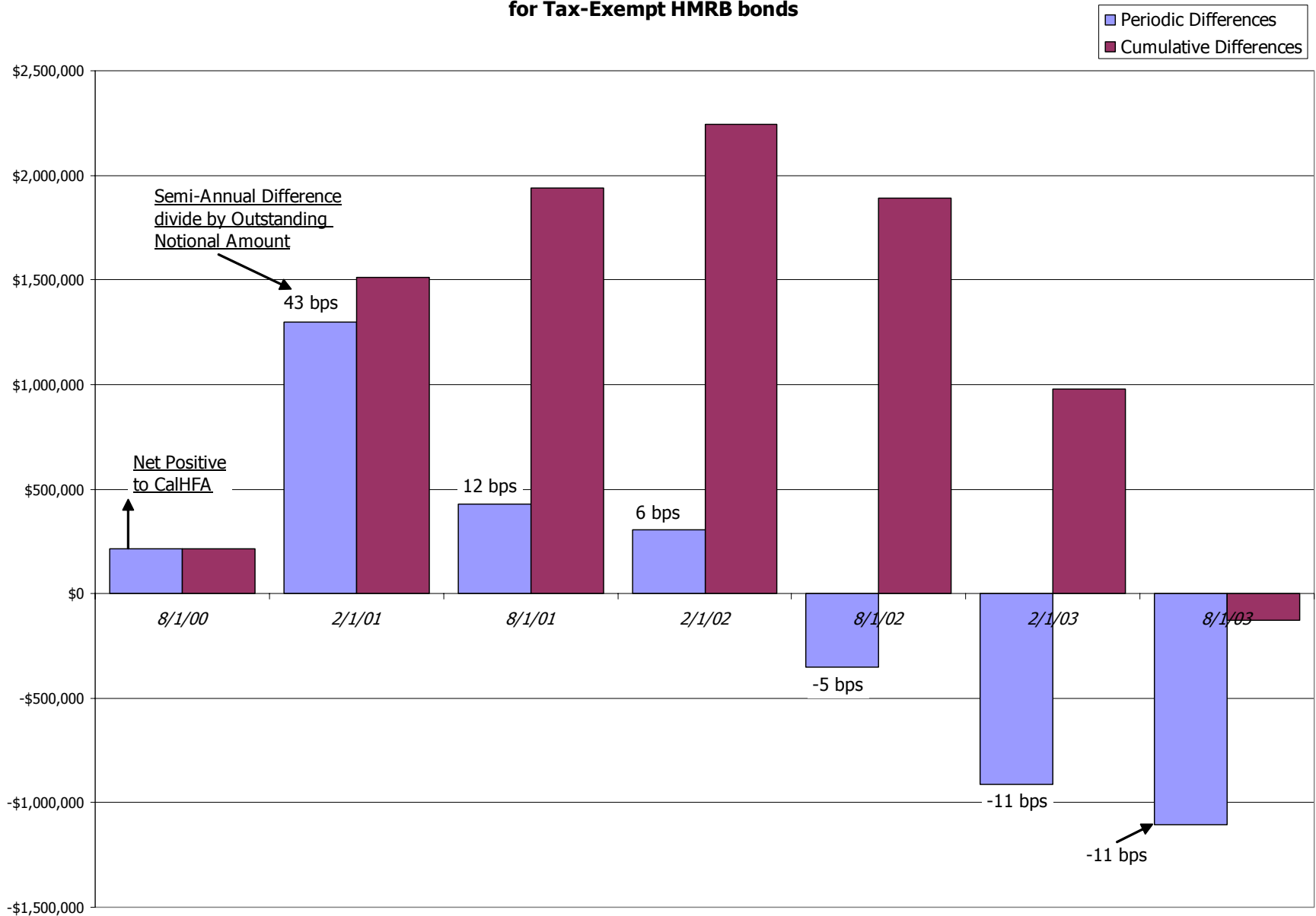


## Variable Rates for Bonds and Swaps



# California Housing Finance Agency

## Net Difference in Bond Payments and Swap Receipts for Tax-Exempt HMRB bonds



# Mission

*Finance below market  
rate loans to create  
safe, decent and  
affordable rental  
housing and to assist  
first-time homebuyers  
in achieving the  
dream of  
homeownership*



# Contact Information

California Housing Finance  
Agency (CalHFA)

1121 L Street, 7<sup>th</sup> Floor

Sacramento, CA 95814

(916) 322-3991

[www.calhfa.ca.gov](http://www.calhfa.ca.gov)



# **Current Trends in Derivatives - One Issuer's Perspective**

**Los Angeles County  
Metropolitan Transportation Authority**



# Introduction to the MTA

MTA:

- is the largest transit property West of the Mississippi
- \$2.7 billion FY04 budget
- has \$3.5 billion of debt outstanding
- provides 80% of muni bus service
- operates 18 mi. subway, 54 mi. light rail
- building 14 mi. busway, 6 mi. rail line ext.

# MTA's Derivatives Experience

- Entered currency swaps in early and mid 90's
- Issued \$470mm of swaps for 3 bonds
- \$170mm swap terminated
- In FY03, authorized rate lock agreement and forward starting interest rate swap as alternatives to a forward refunding
- \$385mm “% of LIBOR” swap now pending
- Currently evaluating commodity swap to hedge fuel costs

# MTA's View of Current Trends

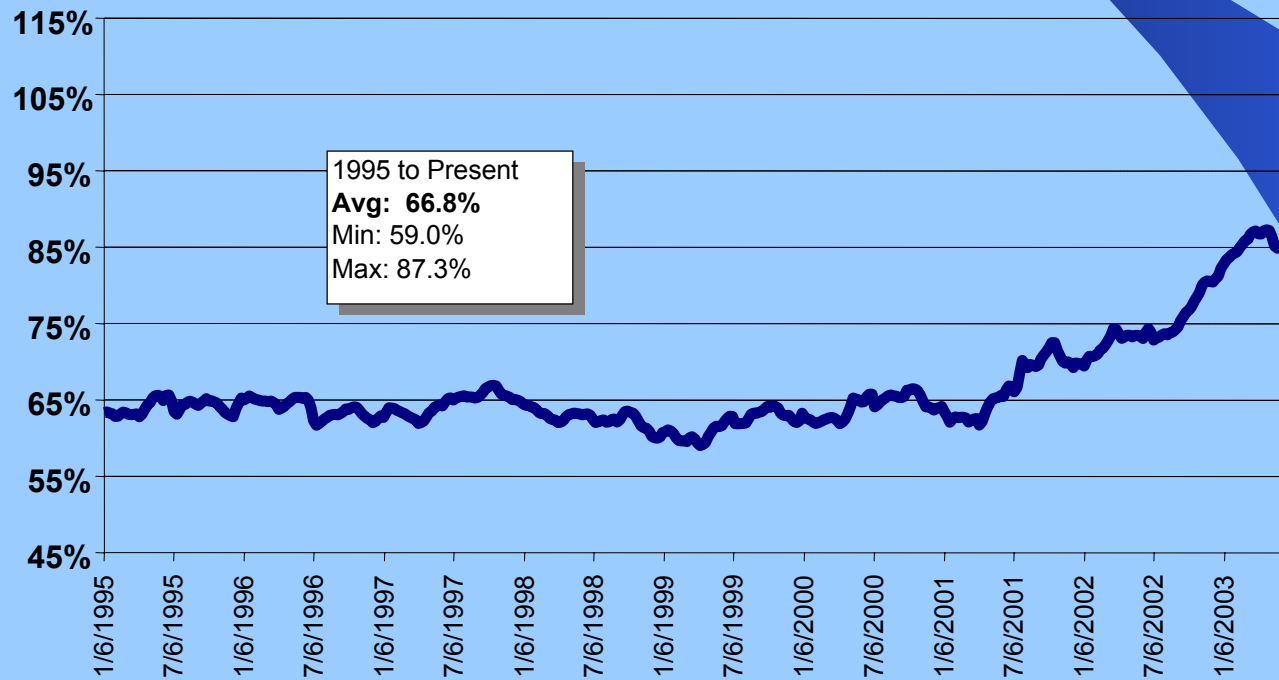
- Products de jour
  - % of LIBOR interest rate swap
  - swaptions
- Trends in policy development
- Trends in accounting treatment and disclosure

# Percentage of LIBOR Swaps

- Currently provide a yield advantage
- Evaluated historic BMA/LIBOR percentage
  - Average 67%
- Compared MTA bonds to LIBOR
  - Outstanding VRDO's trade at 61%
  - Auction Securities should trade about 62%
- Evaluated expectation of tax change

# Using % of LIBOR as a tax-exempt proxy

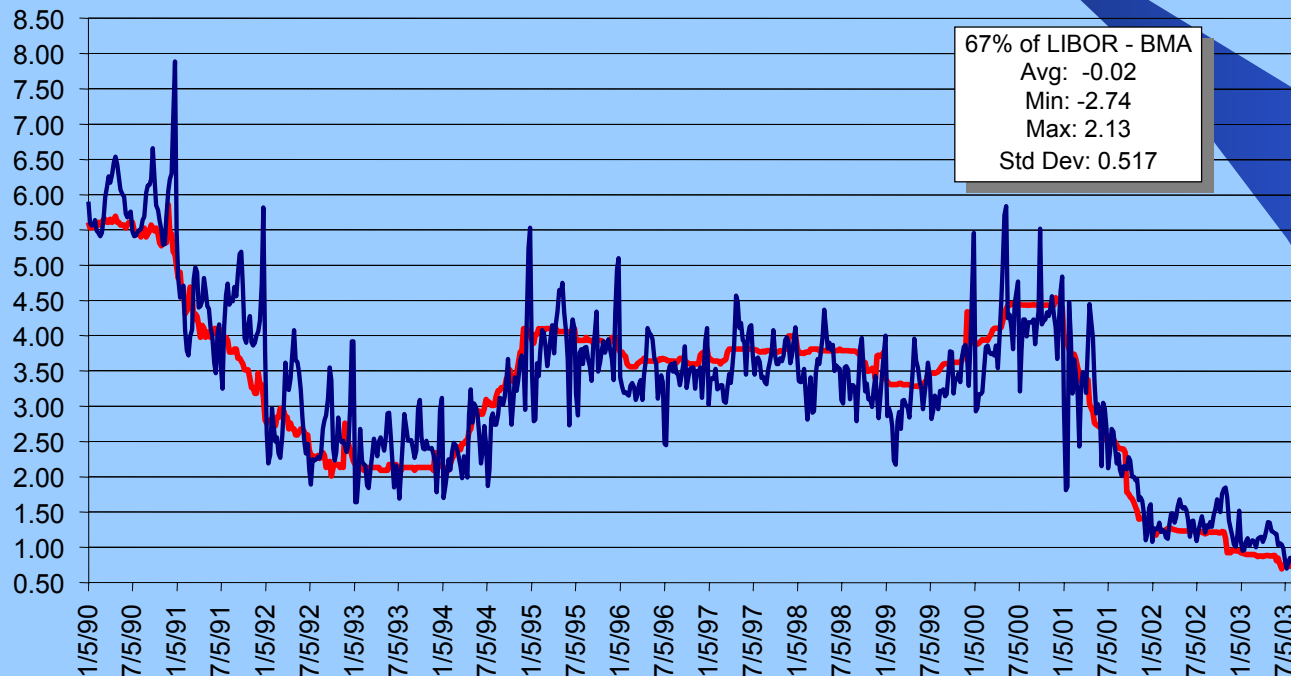
Weekly Data, January 1995 - August 2003  
180 Day Moving Average BMA/ 1-Mo. LIBOR



- The smoothed ratio between BMA and LIBOR has been trending higher due to rate compression as the Federal Reserve has aggressively reduced the Fed Funds rate.

# Using % of LIBOR as a tax-exempt proxy

**67% of 1-Mo. LIBOR vs. BMA Index**  
Weekly Data, January 1990 - August 2003



- The long run average of the ratio has been 67%, but the basis varies.
- The periodic variance is high, mainly due to the volatility of BMA rates.
- The level of rates seems to have a major influence on the ratio.

# Swaptions

- MTA does not find swaptions as compelling
- Generally don't receive as high a percentage of the option value
- Need to be certain of size and timing for issuance
- Prefer savings to be taken over time

# Commodity Swap and Options for Fuel Cost Hedging

- Investigating viability of hedging fuel cost exposure
  - 40 million therms of natural gas
  - 6 million gallons of CARB diesel #2
- Hedge would stabilize costs, not reduce
- Supply contract needs to be tied to an index that can be hedged, or have strong correlation

# Having a Derivatives Policy

- GFOA, credit rating agencies and bond insurers show strong preference for issuers to have formalized procedures on disclosure and management practices for derivatives
- Both initial and ongoing evaluations of risks and termination exposures benefit from having a formal derivatives policy

# Contents of a Derivatives Policy

- Establishment of legal authority
- Objectives for use of derivatives
- Conditions for use or non-use
- Types of derivatives permitted and prohibited
- Procurement methods – competitive/negotiated
- Specific approaches for measuring, evaluating and managing risks
- Contingency and exit plans
- Key business terms
  - Collateral
  - Counterparty credit rating minimums

# Risks to Address

- Basis
- Tax
- Counterparty
- Rollover
- Liquidity
- Amortization
- Credit

# Trends in Accounting Disclosure

- GASB

- Technical Bulletin 2003-1

- Seeks to improve issuer disclosure regarding use of derivatives.

- FASB

- FASB 133

- Requires derivatives be listed at fair value on balance sheet, changes in value may need to be recognized in the income statement

# Summary

- LIBOR based swaps currently provide higher benefit than they have historically
- Swaptions, forward starting swaps and rate lock agreements each provide an alternative to lock in low rates where an advance refunding is not permitted
- Development of a swap policy is advisable to provide a framework for decision making and management of new and outstanding swaps
- New accounting disclosure and revised treatment in the financial statement complicates administration